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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,393	11/02/2001	Masaya Ishida	9319S-000303	1032

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EXAMINER	
HA, NATHAN W	

ART UNIT	PAPER NUMBER
2814	

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/002,393	ISHIDA ET AL.	
	Examiner	Art Unit	
	Nathan W. Ha	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18-25 and 41-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18-25 and 41-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 18-19, 22-24, 41, 45 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishihara et al. (US 6,300,988, previously cited, hereinafter, Ishihara) in view of Koyama et al. (US 6,872,973, previously cited, hereinafter, Koyama) and Angelopoulos et al. (US 6,331,356, newly cited, Angelopoulos.)

In regard to claim 18, in fig. 6, Ishihara discloses an organic device comprising:

an organic thin-film transistor including source/drain electrodes 104 and 105 and an active layer made of an organic material 508;

a liquid crystal composition in the element 520 driven by the thin film transistor;

an interlayer-insulating film 506 disposed between the organic layer and the liquid crystal; and

the active layer being disposed between a gate 502 and the interlayer insulating film, and the active layer being disposed between the gate of the transistor and the source/drain electrodes.

Ishihara, however, does not expressly disclose that the liquid crystal comprises and electroluminescent. It should be noted that such layer is widely included in a TFT

device since it permits and admits lights to the transistor below, OLED. It is necessary and that a display device is capable to receive lights through an electroluminescent element. For instance, Koyama, in fig. 7, for example, discloses an analogous TFT device including all the necessary elements and further teaches that the liquid element comprises an EL element, electroluminescent, 206. This element further allows the device to receive certain lights which are proper for the device's criteria.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include an EL element in a TFT device in order to take the advantage as mentioned above.

Furthermore, the combination of Ishihara and Koyama does not clearly show the relation of the layers as claimed such as the active layer being disposed between the gate and the source/drain regions. It is conventional that channel region of a typical transistor is formed between source/drain region where the current could pass through. The channel region in the above combination is formed as such. However, it is not clear how to ascertain the relation of the gate and source drain regions in this combination. Angelopoulos, however, in fig. 8, discloses an analogous thin film transistor including all of the claimed limitations and further shows that the active region which includes the channel region. The active region is from right below source/drain and above region 110. Angelopoulos further shows that the active region is in between the gate 108 and source/drain regions.

Therefore, it would have been obvious to one of ordinary skill in the art to recognize that an active region of a transistor could be formed below the source/drain

electrode in order to provide electrical connections to the source/drain regions to external devices. In this case the source/drain electrodes are further connected to 107 which functions as an electrical line.

In regard to claim 19, Ishihara and Koyama's combination further comprises a substrate, included in substrate 520, wherein the organic electroluminescent element is provided between the substrate and the organic thin-film transistor.

In regard to claim 22, the organic thin-film transistor including a source 504 having a first part and a plurality of second parts projecting from the first part and a drain 505 having a third part and a plurality of fourth pads projecting from the third pad including drain electrode.

In regard to claim 23, the gate covering at least a part of each of the plurality of second parts and at least a part of each of the plurality of fourth parts. See Ishihara's fig. 1A.

In regard to claim 24, one of the plurality of second parts being sandwiched between two of the plurality of fourth parts, fig. 6.

In regard to claim 45, Ishihara discloses the first electrode is electrode 502, a second electrode is source electrode 518', for example, the liquid is in between. See fig. 6.

In regard to claim 41, Ishihara further discloses that the organic material includes pentacene. See claim 4.

In regard to claim 48, the first electrode being connected to the source electrode or the drain electrode through a wiring that is formed in the interlayer-insulating film. See Ishihara's fig. 6.

3. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishihara and Koyama as applied to claims 18 and 42 above, and further in view of Yamazaki et al. (US 6,420,200, previously cited, hereinafter, Yamazaki.)

In regard to claim 44, the above combination discloses all of the claimed limitations, except the material of the EL element is polyfluorene and polyparaphenylene, PPV.

Yamazaki, in fig. 2, for example, discloses an analogous EL device including an EL element which is made of polyfluorene and PPV. See col. 9, lines 9-13. These materials facilitate the process of hole injecting and printing.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include materials as taught by Yamazaki in a TFT device in order to take the advantage as mentioned above.

4. Claims 21, 42-43 and 46-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishihara and Koyama as applied to claims 18 and 45 above.

In regard to claims 21, 42-43 and 46-47, the above combination teaches all of the claimed limitations as mentioned, except the shape and the thickness or area of the EL device elements.

At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the size and the shape of the elements because

applicant has not disclosed that these features provide an advantage, is used for a particular purpose, or solve a stated problem. One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally well with either shape because they perform the same function of connecting the elements in the device.

Therefore, it would have been obvious to one of ordinary skill in the art to modify the mentioned combination to obtain the invention as specify in the above claims. Indeed, it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Note that the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising therefrom. Where patentability is aid to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

5. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishihara and Koyama as applied to claim18 above, and further in view of Amundson et al. (US 6,545,291, previously cited, hereinafter, Amundson.)

In regard to claim 25, the above combination discloses all of the claimed limitations, except the source/drain elements having a spiral shape. Amundson, in figs. 4A-4B, discloses an analogous device and further includes the source/drain regions having spiral shape in order to increase the surface area in a device that is small and the area is limited.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the arrangement of the elements in order to increase the contact surface area.

Response to Arguments

6. Applicant's arguments with respect to claim 18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan W. Ha whose telephone number is (571) 272-1707. The examiner can normally be reached on M-TH 8:00-7:00(EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nathan Ha
Primary Examiner
October 16, 2006